

**REMARKS**

Claims 1, 2, 4-8 and 10-14 are pending in this application. The Office Action rejects claims 1-14 under 35 U.S.C. §103(a). By this Amendment, Applicant amends claims 1 and 4 and cancels claims 3 and 9.

**I. Rejections Under 35 U.S.C. §103**

The Office Action rejects claims 1-6, 13 and 14 under 35 U.S.C. §103(a) as unpatentable over Nawa in view of Sherif and Chittofrati; rejects claim 5 under 35 U.S.C. §103(a) as unpatentable over Chittofrati in view of Sherif; rejects claim 6 under 35 U.S.C. §103(a) as unpatentable over Chittofrati in view of Sherif and Nawa; rejects claims 7-10 under 35 U.S.C. §103(a) as unpatentable over Chittofrati in view of Uenishi; rejects claim 11 under 35 U.S.C. §103(a) as unpatentable over Chittofrati in view of Sherif and Uenishi; rejects claim 12 under 35 U.S.C. §103(a) as unpatentable over Chittofrati in view of Sherif, Nawa and Uenishi; and rejects claims 7-12 under 35 U.S.C. §103(a) as unpatentable over Nawa in view of Chittofrati, Sherif and Uenishi. Applicant amends claims 1 and 4, cancels claims 3 and 9, and respectfully traverse the rejections.

Instant claim 1, from which claims 2, 4-5, 7-8, 10-11 and 13 depend, recites "an alkoxide or an acetate-metal complex." Instant claim 6, from which claims 12 and 14 depend, recites "contacting said organic phase with said aqueous phase to produce a product of zirconium hydroxide by hydrolysis reaction ..." Thus, the instant claimed invention comprises an oily phase having an organometallic compound in which the metal has a covalent bond, not an ionic bond, with an organic group. Hence, upon contact with water, the organometallic compound will not be dissociated and directly react with water to form a hydroxide. Rather, the reaction occurs at the interface between the aqueous and oily phases. As a result of the reaction occurring at the interface between the aqueous and oily phases, a

complex oxide in which metals are distributed at the element level is obtained. This feature is advantageous and novel in the art and would not have been obvious over the cited references.

In contrast, Nawa does not disclose a microemulsion which is formed by adding a surfactant. Rather, the object in Nawa is to form bulk ceramics, and thus only *coarse* particles are formed. Further, in Nawa, a surfactant is not used to form precipitated particles. Rather, in Nawa, ceria powder, zirconia powder and titania powder are mixed and fired, but the resultant fired product may have a uniformity at the level of powder (microns), not the atomic level. Hence, Nawa nowhere discloses the use of a surfactant, or fine metal compound oxide particles having a composition uniformity at the atomic level, as claimed.

Chittofrati is also different from the claimed invention. In Chittofrati, the metal salt of the surfactant does not directly become a hydroxide, but the metal ion dissociated from the surfactant is neutralized to form a metal hydroxide. In Chittofrati et al., a metal element in the oily phase forms a metal salt with a surfactant. Accordingly, when a surfactant metal salt, more specifically, a ferric perfluoroethermonocarboxylate in the Example, is added to the oily phase, the surfactant metal salt is dissociated to a metal ion and the residue surfactant ion upon contact with the dispersed aqueous phase, and the metal ion is entrained into the aqueous phase, by which both metal ion A having originally existed from the start and metal ion B having being entrained coexist in the form of an aqueous solution. If an alkali is then added to the aqueous solution, hydrolysis occurs to form a complex oxide of metal ions A and B. Thus, the reaction is considered to occur at the inner portion of the aqueous phase, not at the interface between the aqueous and oily phases. Alternatively, if an alkali is added earlier in the process, metal A may precipitate first, followed by entraining of the metal B, thus forming a core-shell structure.

Hence, Chittofrati discloses a level of uniformity of the element distribution of the complex oxide that is typical in the conventional art in which both metal ions A and B coexist

from the beginning. Chittofratti, however, thus does not teach or suggest a reaction occurring at the interface between the aqueous and oily phases, resulting in a complex oxide in which metals are distributed at the element level.

Moreover, none of Sherif and Uenishi are cited for, nor do they remedy, the deficiencies of Nawa or Chittofrati. Thus, no combination of Sherif, Uenishi, Nawa or Chittofrati would have rendered obvious the features of instant independent claims 1 or 6, or the remaining claims depending therefrom, at least because no combination of the foregoing references would have obtained the instantly claimed features.

In view of the foregoing, neither of instant independent claims 1 or 6, or the remaining claims depending therefrom, would have been rendered obvious over any combination of Chittofrati, Nawa, Sherif and Uenishi. Reconsideration and withdrawal of the rejection are earnestly solicited.

## **II. Conclusion**

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1, 2, 4-8 and 10-14 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



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JAO:BSP/amw

Attachment:  
Petition for Extension of Time

Date: March 4, 2008

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